SEW EURODRIVE

Operating Instructions

MOVIDRIVE® B, MOVIDRIVE® compact, MOVIDRIVE® A

Information regarding UL

Ausgabe 02/2010

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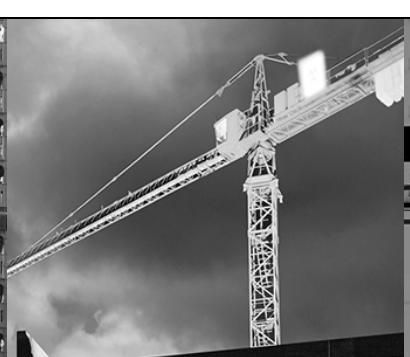

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1 MOVIDRIVE® B

1.1 Information regarding UL

1.1.1 Field wiring power terminals

- Use 60/75 °C copper wire only – Models with suffix 0003 to 0300.

  Use 75 °C copper wire only – Models with suffix 0370 to 2500.

- Tighten terminals to in-lbs (Nm) as follows:

Series	Frame size	in-lbs	Nm
MOVIDRIVE® B	0XS, 0S, 0L	5	0.6
	1, 2S	5	0.6
	2	13	1.5
	3	31	3.5
	4, 5	120	14
	6	180	20
	7	620	70

1.1.2 Short-circuit current rating

- Suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes:
  - MOVIDRIVE® B models with suffix 0005 to 2500 (400 V units only).

    Max. voltage is limited to 500 V.
  - MOVIDRIVE® B models with suffix 0015 to 0300 (230 V units only).

    Max. voltage is limited to 240 V.

1.1.3 Branch circuit protection

Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes.

For maximum fuse rating see tables below.

AC 400/500 V units

MOVIDRIVE® MDX60B/61B...5_3	Max. supply short circuit current	Max. supply voltage	Max. fuse rating
0005/0008/0011/0014	AC 200,000 A	AC 500 V	AC 15 A / 600 V
0015/0022/0030/0040	AC 200,000 A	AC 500 V	AC 35 A / 600 V
0055/0075	AC 200,000 A	AC 500 V	AC 60 A / 600 V
0110	AC 200,000 A	AC 500 V	AC 110 A / 600 V
0150/0220	AC 200,000 A	AC 500 V	AC 175 A / 600 V
0300	AC 200,000 A	AC 500 V	AC 225 A / 600 V
0370/0450	AC 200,000 A	AC 500 V	AC 350 A / 600 V
0550/0750	AC 200,000 A	AC 500 V	AC 500 A / 600 V
0900	AC 200,000 A	AC 500 V	AC 250 A / 600 V
1100	AC 200,000 A	AC 500 V	AC 300 A / 600 V
1320	AC 200,000 A	AC 500 V	AC 400 A / 600 V
1600	AC 200,000 A	AC 500 V	AC 400 A / 600 V
2000	AC 200,000 A	AC 500 V	AC 500 A / 600 V
2500	AC 200,000 A	AC 500 V	AC 600 A / 600 V

AC 230 V units

MOVIDRIVE® MDX61B...2_3	Max. supply short circuit current	Max. supply voltage	Max. fuse rating
0015/0022/0037	AC 200,000 A	AC 240 V	AC 30 A / 250 V
0055/0075	AC 200,000 A	AC 240 V	AC 110 A / 250 V
0110	AC 200,000 A	AC 240 V	AC 175 A / 250 V
0150	AC 200,000 A	AC 240 V	AC 225 A / 250 V
0220/0300	AC 200,000 A	AC 240 V	AC 350 A / 250 V

1.1.4 Motor Overload Protection

The units are provided with motor overload protection with a trip current adjusted to 150% of the rated motor current.

1.1.5 Ambient temperature

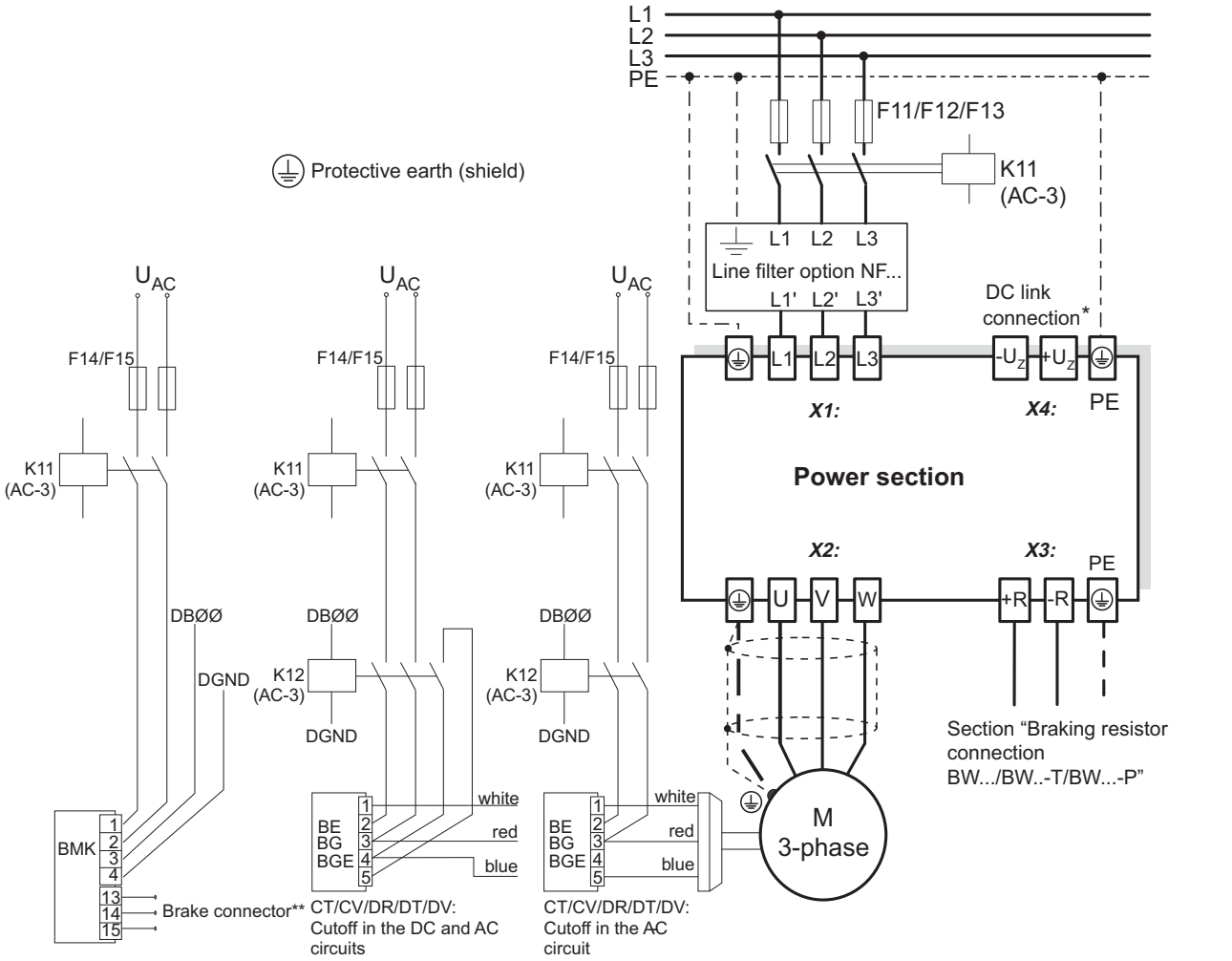
The units are suitable for an ambient temperature of 40 °C, max. 60 °C with derated output current.

To determine output current rating at higher than 40 °C, the output current should be derated 2.5 % per °C between 40 °C and 50 °C, and 3 % per °C between 50 °C and 60 °C.

	INFORMATION • **An external DC 24 V voltage supply has to be limited to a max. voltage U_{max} = DC 30 V and max. current I_{max} = 8 A.** • **UL certification does not apply to operation in voltage supply systems with a non-grounded star point (IT systems).**

1.2 Wiring diagram for basic unit

1.2.1 Power section and brake (size 1-6)



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* With sizes 1, 2 and 2S, there is no PE connection next to the supply system connection terminals and motor connection terminals (X1, X2). In this case, use the PE terminal next to the DC link connection (X4).

** **You must adhere to the connection sequence of the brake connector.** Incorrect connection will cause irreparable damage to the brake. **Read the operating instructions for the motors** when connecting the brake using the terminal box.

	INFORMATION
	• Connect the brake rectifier using a separate supply system lead. • **Supply via the motor voltage is not permitted!**

Always switch off the brake on the DC and AC sides with:

– all hoist applications,

– Drives that require a rapid brake response time

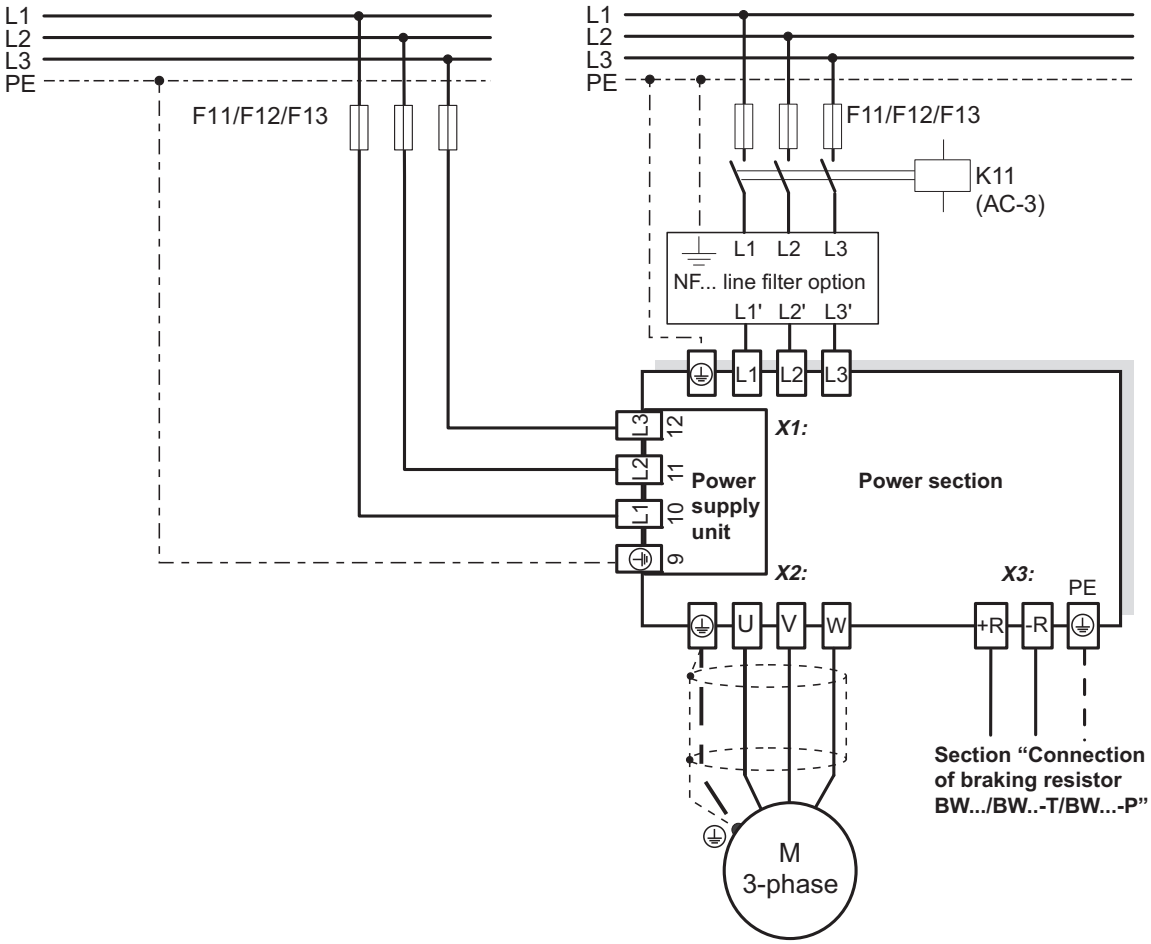
– CFC and SERVO operating modes

Brake rectifier in the control cabinet

Install the connection cables between the brake rectifier and the brake separately from other power cables when installing the brake rectifier in the control cabinet. Joint installation is only permitted with shielded power cables.

1.2.2 Power section and DC power supply unit (size7)

For connecting the brake, refer to the wiring diagram of size 1-6.



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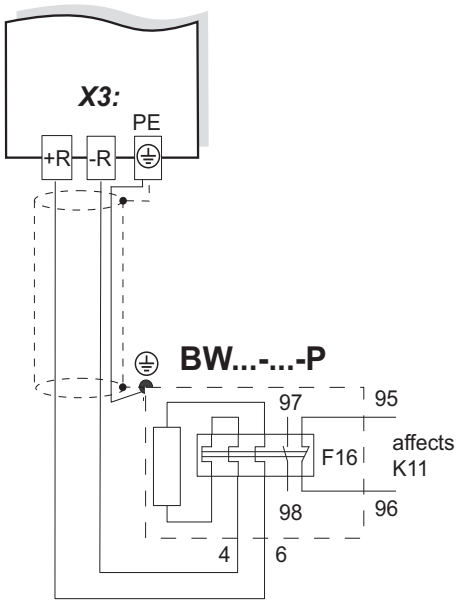
Technical data of DC power supply unit:

- Rated current: AC 2.4 A
- Inrush current AC 30 A / AC 380 - 500 V

	INFORMATION
	Note that the connection of external +24 V power supply units to the X10:9 control terminal is not permitted in backup mode via power supply unit. Incorrect connection prompts an error message.

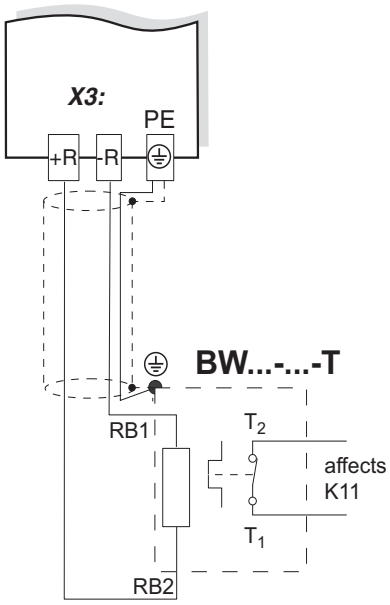
1.2.3 Braking resistor BW... / BW...-...-T /BW...-...-P

Power section



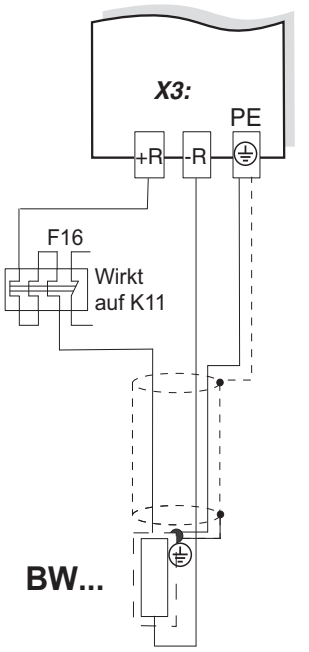
When the signal contact F16 trips, K11 must be opened and DIØØ"/Controller inhibit" must receive a "0" signal. The resistor circuit must not be interrupted!

Power section



When the internal temperature switch trips, K11 must be opened and DIØØ"/Controller inhibit" must receive a "0" signal. The resistor circuit must not be interrupted!

Power section



When the external bimetal relay (F16) trips, K11 must be opened and DIØØ "/Controller inhibit" must receive a "0" signal . The resistor circuit must not be interrupted!

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Braking resistor type	Overload protection		
	Design specified	Internal temperature switch (..T)	External bimetallic relay (F16)
BW...	-	-	Required
BW...-...-T	-	One of the two options (internal temperature switch/external bimetallic relay) is required.	
BW...-003 / BW...-005	Adequate	-	Permitted
BW090-P52B	Adequate	-	-

2 MOVIDRIVE® compact

2.1 Information Regarding UL

2.1.1 Field Wiring Power Terminals

- Use 60/75 °C copper wire only – Models with suffix 0003 to 0300.

  Use 75 °C copper wire only – Models with suffix 0370 to 0750.

- Tighten terminals to in-lbs (Nm) as follows:

Series	Frame Size	in-lbs	Nm
MOVIDRIVE® compact	1	5	0.6
	2	13	1.5
	3	31	3.5
	4, 5	120	14

2.1.2 Short Circuit Current Rating

- Suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes:
  - MOVIDRIVE® compact models with suffix 0015 to 0750 (400 V units only).

    Max. voltage is limited to 500 V.
  - MOVIDRIVE® compact models with suffix 0015 to 0300 (230 V units only).

    Max. voltage is limited to 240 V.

2.1.3 Branch Circuit Protection

Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes.

For maximum fuse rating see tables below.

400/500 V units

MOVIDRIVE® *compact* MC_4_A...5_3	Max. supply short circuit current	Max. supply voltage	Max. fuse rating
0015/0022/0030/0040	AC 200,000 A	AC 500 V	AC 35 A / 600 V
0055/0075/0110	AC 200,000 A	AC 500 V	AC 30 A / 600 V
0150/0220	AC 200,000 A	AC 500 V	AC 175 A / 600 V
0300	AC 200,000 A	AC 500 V	AC 225 A / 600 V
0370/0450	AC 200,000 A	AC 500 V	AC 350 A / 600 V
0550/0750	AC 200,000 A	AC 500 V	AC 500 A / 600 V

230 V units

MOVIDRIVE® *compact* MC_4_A...2_3	Max. supply short circuit current	Max. supply voltage	Max. fuse rating
0015/0022/0037	AC 200,000 A	AC 240 V	AC 30 A / 250 V
0055/0075	AC 200,000 A	AC 240 V	AC 110 A / 250 V
0110	AC 200,000 A	AC 240 V	AC 175 A / 250 V
0150	AC 200,000 A	AC 240 V	AC 225 A / 250 V
0220/0300	AC 200,000 A	AC 240 V	AC 350 A / 250 V

2.1.4 Motor Overload Protection

The units are provided with motor overload protection with a trip current of 140% of the rated current.

2.1.5 Ambient Temperature

The units are suitable for an ambient temperature of 40 °C, max. 60 °C with derated output current.

To determine output current rating at higher than 40 °C, the output current should be derated 2.5 % per °C between 40 °C and 50 °C, and 3 % per °C between 50 °C and 60 °C.

NOTES

- **An external DC 24 V voltage supply has to be limited to a max. voltage U_{max} = DC 30 V and max. current I_{max} = 8 A.**
- **UL certification does not apply to operation in voltage supply systems with a non-grounded star point (IT systems).**

2.2 Wiring diagram for basic unit

2.2.1 Wiring the power section and brake

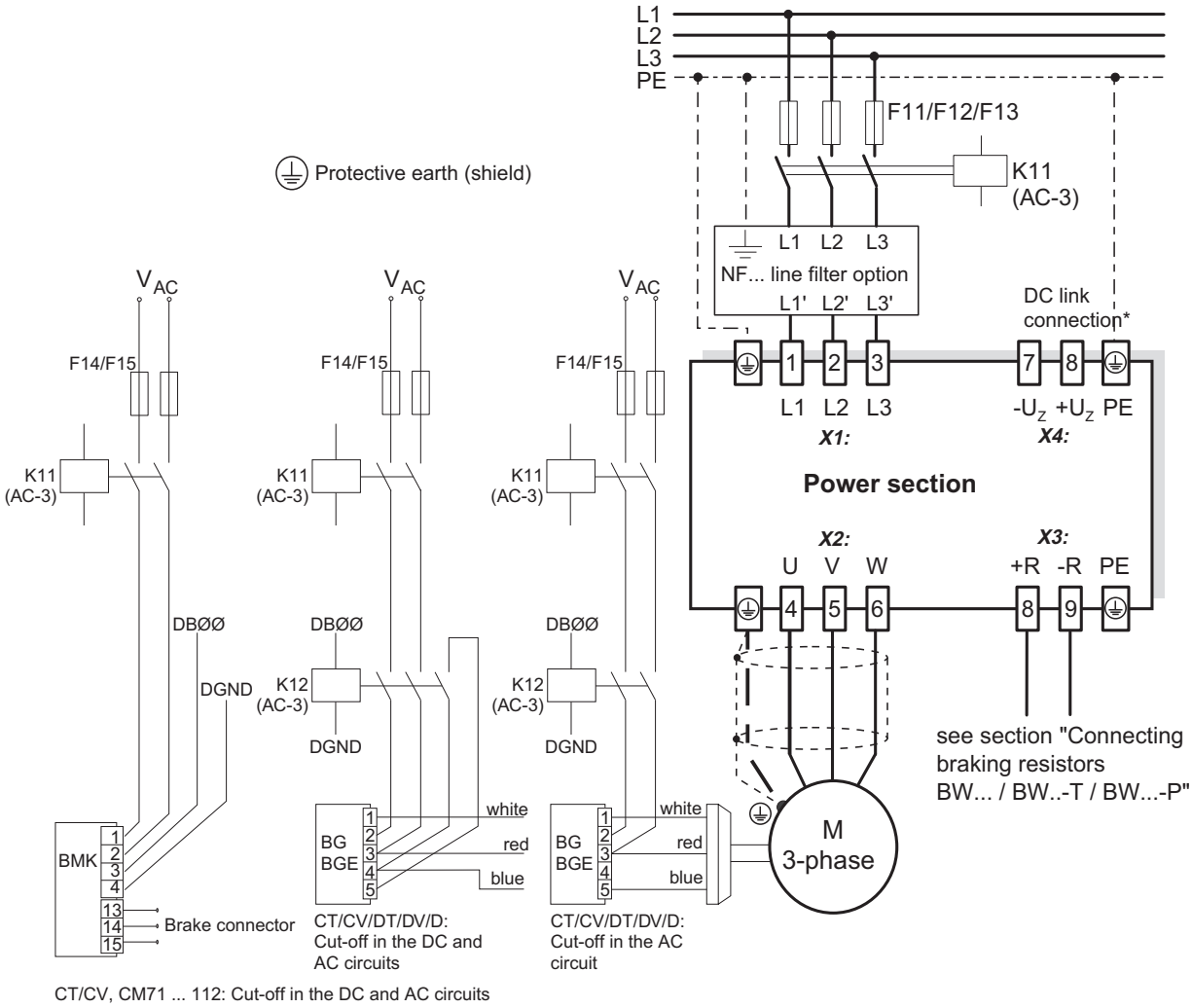


Figure 1: Wiring diagram, power section and brake

* With sizes 1 and 2, there is no PE connection next to the supply system connection terminals and motor connection terminals (X1, X2). In this case, use the PE terminal next to the DC link connection (X4).

Important: Read the operating instructions for the motors when connecting the brake.

STOP	**STOP!**
	If the brake rectifier is connected via the supply system lead, the braking function is restricted. • Connect the brake rectifier using a separate supply system lead. • **Supply via the motor voltage is not permitted!**

Always switch off the brake on the DC and AC sides with:

– All hoist applications

– Drives that require a rapid brake response time

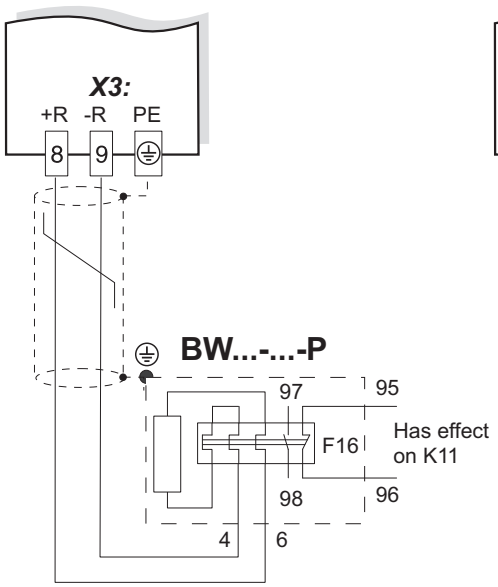
– CFC and SERVO operating modes

Brake rectifier in control cabinet

Install the connection cables between the brake rectifier and the brake separately from other power cables when installing the brake rectifier in the control cabinet. Joint installation is only permitted with shielded power cables.

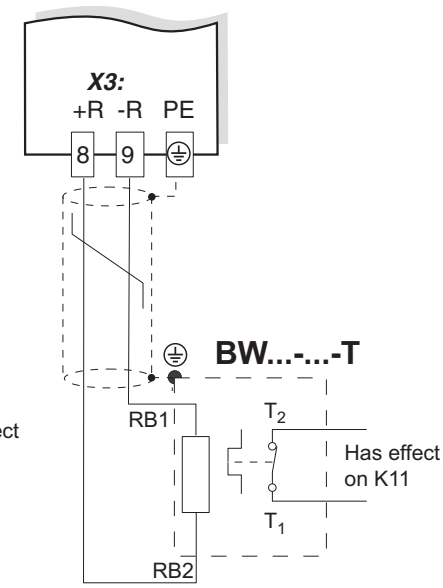
2.2.2 Connecting BW... / BW...-...-T /BW...-...-P braking resistors

Power section



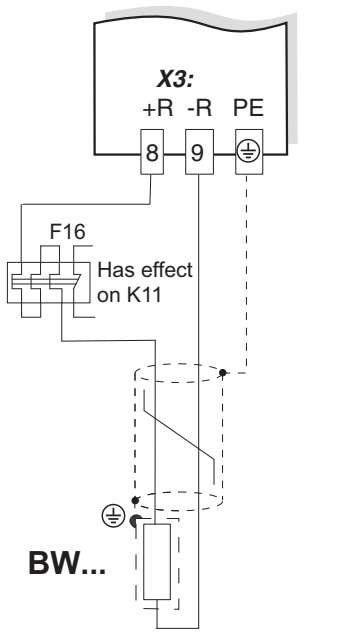
When the auxiliary contact trips, K11 must be opened and DIØØ"/Controller inhibit" assigned a "0" signal. Do not interrupt the resistor circuit!

Power section



When the internal temperature switch triggers, K11 must be opened and DIØØ"/Controller inhibit assigned a "0" signal. Do not interrupt the resistor circuit!

Power section



When the external bimetallic relay (F16) triggers, K11 must be opened and DIØØ"/Controller inhibit" assigned a "0" signal. Do not interrupt the resistor circuit!

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Braking resistor type	Overload protection		
	Design specified	Internal temperature switch (..T)	External bimetallic relay (F16)
BW...	-	-	Required
BW...-...-T	-	One of the two options (internal temperature switch / external bimetallic relay) is required.	
BW...-003 / BW...-005	Adequate	-	Permitted

3 MOVIDRIVE® A

3.1 Information Regarding UL

3.1.1 Field Wiring Power Terminals

- Use 60/75 °C copper wire only – Models with suffix 0003 to 0300.

  Use 75 °C copper wire only – Models with suffix 0370 to 0750.

- Tighten terminals to in-lbs (Nm) as follows:

Series	Frame Size	in-lbs	Nm
MOVIDRIVE® A	1	5	0.6
	2	13	1.5
	3	31	3.5
	4, 5	120	14

3.1.2 Short Circuit Current Rating

- Suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes:
  - MOVIDRIVE® A models with suffix 0015 to 0750 (400 V units only).

    Max. voltage is limited to 500 V.
  - MOVIDRIVE® A models with suffix 0015 to 0300 (230 V units only).

    Max. voltage is limited to 240 V.

3.1.3 Branch Circuit Protection

Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes.

For maximum fuse rating see tables below.

400/500 V units

MOVIDRIVE® MD_60A...5_3	Max. supply short circuit current	Max. supply voltage	Max. fuse rating
0015/0022/0030/0040	AC 200,000 A	500 VAC	30 A / 600 V
0055/0075/0110	AC 200,000 A	500 VAC	30 A / 600 V
0150/0220	AC 200,000 A	500 VAC	175 A / 600 V
0300	AC 200,000 A	500 VAC	225 A / 600 V
0370/0450	AC 200,000 A	500 VAC	350 A / 600 V
0550/0750	AC 200,000 A	500 VAC	500 A / 600 V

230 V units

MOVIDRIVE® MD_60A...2_3	Max. supply short circuit current	Max. supply voltage	Max. fuse rating
0015/0022/0037	AC 200,000 A	240 VAC	30 A / 250 V
0055/0075	AC 200,000 A	240 VAC	30 A / 250 V
0110	AC 200,000 A	240 VAC	175 A / 250 V
0150	AC 200,000 A	240 VAC	225 A / 250 V
0220/0300	AC 200,000 A	240 VAC	350 A / 250 V

3.1.4 Motor Overload Protection

The units are provided with motor overload protection with a trip current of 140% of the rated current.

3.1.5 Ambient Temperature

The units are suitable for an ambient temperature of 40 °C, max. 60 °C with derated output current.

To determine output current rating at higher than 40 °C, the output current should be derated 2.5 % per °C between 40 °C and 50 °C, and 3 % per °C between 50 °C and 60 °C.

NOTES

- **An external DC 24 V voltage supply has to be limited to a max. voltage U_{max} = DC 30 V and max. current I_{max} = 8 A.**
- **UL certification does not apply to operation in voltage supply systems with a non-grounded star point (IT systems).**

3.2 Wiring diagram for basic unit

3.2.1 Connection of the power section and brake

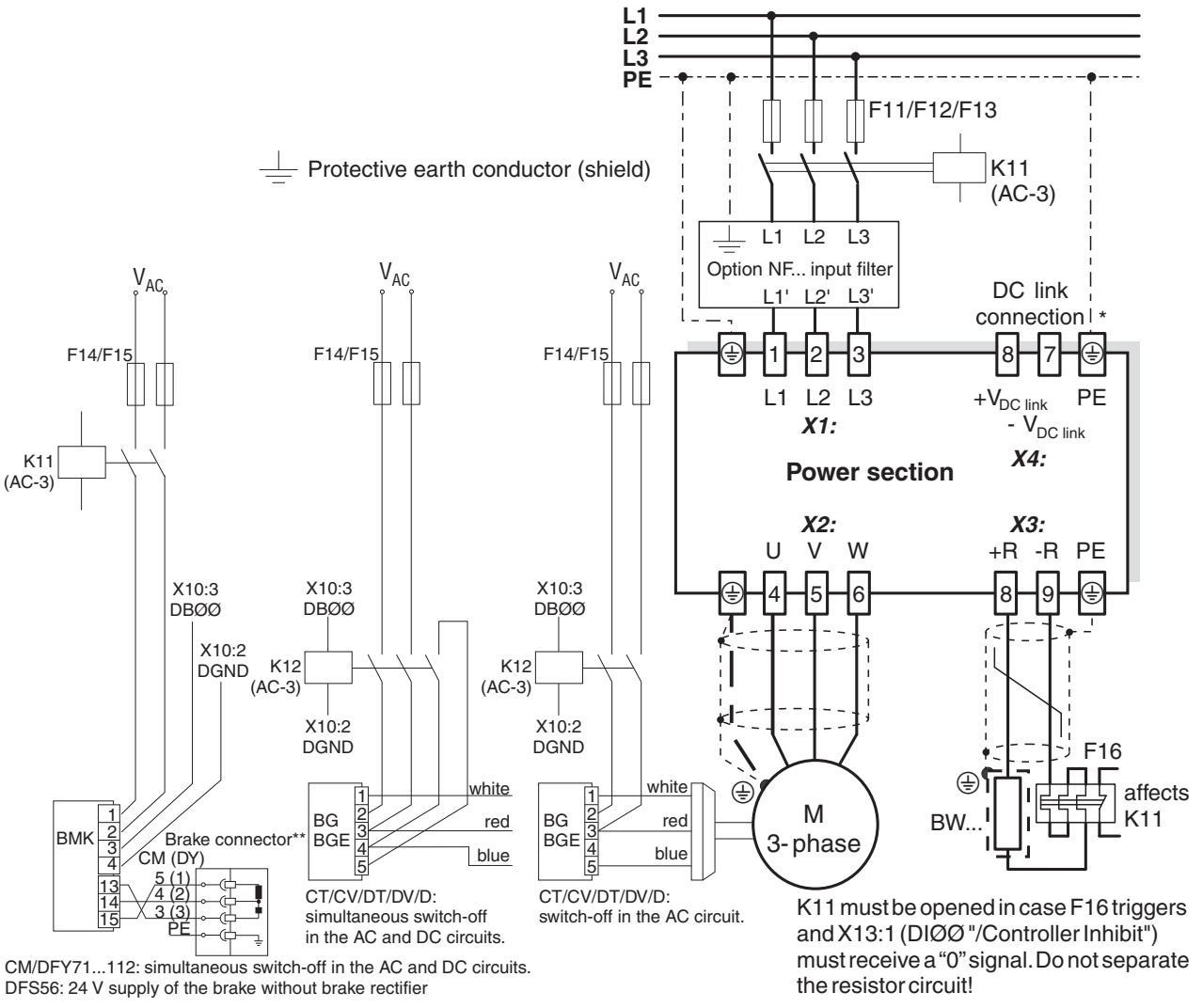

Figure 2: Wiring diagram, power section and brake

* With sizes 1 and 2, there is no PE connection next to the mains connection terminals. In this case, use the PE terminal next to the DC link connection.

Important: It is essential to adhere to the sequence of connections. Incorrect connection will lead to irreparable damage to the brake.

STOP	**STOP!** **A separate supply system lead is required for connecting the brake rectifier. Powering it from the motor voltage is not permitted!**

Always switch off the brake on the DC and AC sides under the following conditions:

- all hoist applications,
- drives which require a rapid brake reaction time and
- in CFC and SERVO operating modes.

Brake rectifier in switch cabinet

Route the connection cables between the brake rectifier and the brake separately from other power cables when installing the brake rectifier in the switch cabinet. Joint routing is only permitted if the power cables are shielded.

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Driving the world

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